



STRATEGIES, TECHNIQUES, APPLICATIONS AND RESOURCES

Dr. Arceloni Neusa Volpato

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Dr. S. Karthikeyan

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Analysing the Trade Direction and Commodity Composition of IBSA Nations

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Abstract:

International trade is widely recognized as a key driver of economic growth, prompting countries worldwide to engage in various trade agreements such as multilateral, regional, or bilateral trade. One such forum is IBSA, consisting of India, Brazil, and South Africa - all emerging economies that could potentially serve as catalysts for economic growth, especially in developing nations. It is essential to assess their trade direction and composition, which researchers have evaluated using basic statistical tools such as correlation, growth rate, and Revealed Comparative Advantage. The study revealed that Intra-IBSA exports are more integrated than Intra-IBSA imports. While these three countries are aligned with their respective production lines, India's commodities' comparative advantages are poor. Therefore, there is an urgent need to enhance the quality of Indian products.

Key Word: Trade, Intra Import, Intra Export IBSA, RCA

1. Introduction

International trade plays a crucial role in the economic development of countries. All around the world, countries are striving to integrate themselves to enhance international trade. There are several forms of Trade Agreement such as Multilateral, Regional and Bilateral Trade Agreement that countries adopt to reduce or eliminate barriers to trade and investment among them through establishing common rules and regulations for international trade. In 2003, India, Brazil and South Africa formed Dialogue Forum (IBSA), with the primary objective of promoting cooperation and dialogue among these nations on various global issues and challenges.

The IBSA forum has formulated to promote cooperation among developing countries in Africa, Asia, and Latin America by facilitating the sharing of experiences, knowledge, and best practices. It provides a platform for member countries to discuss regional and global issues of mutual interest, share perspectives, and coordinate their positions on international forums and organizations. IBSA prioritizes economic cooperation among its member countries, including trade, investment, and economic partnerships, thereby creating opportunities for businesses and entrepreneurs from India, Brazil, and South Africa to collaborate. The objective of IBSA also emphasizes social development, poverty alleviation, and inclusive growth. As such, member states work together on initiatives related to education, healthcare, and social welfare, with a focus on sharing successful models and experiences. Additionally, IBSA seeks to promote cultural exchange among member countries by taking initiatives to showcase the rich cultural heritage of India, Brazil, and South Africa. The forum is committed to addressing environmental and sustainability challenges, including climate change, renewable energy, and sustainable development, seeking innovative solutions to global problems. Furthermore, IBSA promotes peace, stability, and security in the regions where its member states are located. The forum supports conflict resolution efforts and works towards maintaining peace and security at the global level. IBSA advocates for reform in global governance structures, including the United Nations and international financial institutions, to ensure that the voices and interests of developing countries are adequately represented in these institutions. Finally, IBSA members cooperate on human rights issues and promote a human rights-based approach to development.

There are several economic factors which are contributed to the formation of IBSA such as these three countries of IBSA are emerging economies of the world and members of IBSA are complementary economies to each other like India's information technology sector, Brazil's agricultural expertise and South Africa's mineral resources can provide mutual benefits through collaboration.

Purpose of Research: Conducting research to analyse the trade direction and commodity composition of IBSA nations is crucial for making informed decisions, promoting economic growth, and fostering international cooperation among these emerging economies. This research is a valuable tool for comprehending their positions in the global trade landscape and influencing their economic destinies.

Research Gap: Numerous studies have been conducted on research policies, in-depth sectoral analysis, and the effects of external factors such as financial crises, pandemics, and trade disputes on the trade patterns of IBSA nations. While some of these studies have concentrated on the achievement of IBSA's objectives, the analysis of the trade direction and commodity composition of IBSA nations remains unexplored. Therefore, I have chosen to focus my research on "Analysing the Trade Direction and Commodity Composition of IBSA Nations."

2. Objectives

1. Evaluate the current trade relationships between India, Brazil, and South Africa, including the volume and composition of trade.
2. Identify the competitiveness of exportable product of India, Brazil and South Africa.
3. Identify any existing trade barriers such as tariffs, non-tariff barriers, and trade restrictions that hinder the flow of goods among these countries.

3. Research Methodology

This study relies solely on secondary data and is descriptive in nature. The data has been gathered from various sources such as the World Bank's WITS, United Nations' UN Comtrade and WTO. Statistical tools have been used for analysis, including basic statistics such as correlation, growth rates and percentage shares of India, Brazil, and South Africa to determine current trade trends. Additionally, Balassa's revealed Comparative Advantage index has been employed to identify competitiveness.

4. Analysis

The study is divided into three sections. The first section analyses the current trade trends and composition of trade for India, Brazil, and South Africa (IBSA). Section 2 comprises for assessment of Revealed Comparative Advantage for these three Countries of IBSA. Section 3 comprises for the study of obstacle factors in Intra- IBSA trade. The time horizon has been taken from 2013 to 2021 to analyse Direction of trade while the data of 2022 has been taken to evaluate trade composition. Data are given in annexure.

Table No.1(Annexure 1) shows that the share of intra-IBSA import with total IBSA imports were 3.10%, which slightly decreased to 2.65% in 2018, but then increased back up to 3.44% in 2021. Therefore, there has been an increasing trend in the share of IBSA imports during the analysis period. On the other hand, the share of intra-IBSA export in total IBSA export has decreasing, from 2.87% in 2021 from 3.08% in 2013. In terms of growth rate of Intra- IBSA import, Total- IBSA import, Intra- IBSA export and Total-IBSA export show that the Intra-IBSA import growth rate was 9.36% and Total- IBSA import was 21.18%. It reveals that growth rate of Total-IBSA import is much higher than Intra-IBSA imports. On the other hand, growth rate of Intra-IBSA export is greater than Total-IBSA exports. Thus, findings show that Intra- IBSA import has increasing trends whereas Intra-IBSA exports has decreasing trends and growth rate of Intra- IBSA import is lesser than Intra- IBSA exports and Total-IBSA exports is greater than Total-IBSA export. Thus, the country of IBSA is comparatively more integrated in terms of exports. Correlation analysis between Intra- IBSA and total IBSA imports show that the relationship between Intra-IBSA import and Total- IBSA import are moderate and positive because degree of correlation is 0.247 but no significant relation between these variables. Correlation analysis of Intra-IBSA export and Total IBSA export shows that there is strong negative and significant relationship. Intra- IBSA import and Intra-IBSA export shows that there is strong positive relationship between two but not significant relation. Thus, analysis shows that IBSA countries are more integrated than trade relations to others.

Table No. 2 (Annexure 2) exhibits that Brazil's exports to India are on the rise, while its exports to South Africa are declining. Brazil's imports from both India and South Africa have increased steadily from 2013 to 2021. Brazil has an unfavorable balance of trade with India, but a favourable one with South Africa. The trade growth rate between Brazil and India was 23.83%, while it was -15% with South Africa. This indicates that Brazil's trade growth rate with India is significantly higher than with South Africa, possibly due to a significant decrease in Brazil's volume of trade with South Africa.

Trade Composition: In this section, researcher analysed the trade commodity composition of India, Brazil, and South Africa to evaluate the Intra IBSA commodities share and find the Revealed Comparative Advantage. Top ten export commodities have been taken of IBSA countries of year 2022 to analyse it. **Table No. 3(Annexure 3)** shows that the Parts and Accessories of the Motor Vehicles of Headings 87.01 to 87.05 had the highest value of 4.87%, followed by Petroleum Oils other than Crude with 4.50%, and Medicaments (excluding goods of Heading 30.02, 30.05, or 30.06) with 1.93% in India's commodity exports with Brazil. Thus, it shows India mainly exports of industrial goods and petroleum products to Brazil that would be beneficial for India. India's commodity export to South Africa shows that Motor Car and other Motor vehicle has the highest share with SA as 18%, followed by Petroleum oils other than crude (4%) and Medicaments (excluding goods of heading 30.02, 30.05 or 30.06) with 3%. Thus, it shows that India mainly exports of industrial and petroleum products. Findings reveal that India's commodity exports to Brazil and South Africa are dominated by the same product. It is a positive sign for India because India's commodity exports are fitted with these two countries as per expectation.

Table number 4, (Annexure 4) displays Brazil's commodity export to India and South Africa. In terms of export to India, Brazil's highest-ranking commodity is Petroleum and Oils obtained from bituminous minerals at

4.33%, followed by Cane Sugar, Beet Sugar and Chemically pure sucrose in solid form at 2.08%. In terms of export to South Africa, Brazil's highest-ranking commodity is Meat and edible offal of the poultry of heading 01.05 at 2.44%, followed by petroleum oils other than crude at 2.07%. Thus, Brazil mainly exports agricultural products to both India and SA. It is a positive sign for Brazil in terms of commodity exports to India and Brazil. Because the strength of Brazil in production of agricultural product. Thus, findings show that Brazil is also fitted in her line of production.

Table number 5 (Annexure 5) analyses South Africa's commodity exports to India and Brazil. Export composition of SA with India reveals that Coal, briquettes, ovoids, and similar solid fuels manufactured from coal are having highest rank with 23.36%. Manganese ore and concentrates is occupying second rank with 15.80%. In terms of South Africa's commodity export to Brazil shows that Centrifuges, including centrifugal dryers, take the lead with a share of 3.5%, followed by Manganese ores and concentrates with a share of 2.1%. Thus, it shows that South Africa exports of natural resource's product. This findings advocate that South Africa is also fitted on her line of production because SA is rich natural resource's products.

From the above analysis, study concludes that all these three members of IBSA are exporting of those products in which they have their strength.

5. Analysis of RCA of IBSA Countries:

Top ten exportable commodities of year 2022 have been taken of India, Brazil and South Africa to analyses the competitiveness of commodity.

Table No.6 (Annexure 6) has analysed the Revealed Comparative Advantage to find out the competitiveness of India's commodity exports. It shows that the index value of RCA's India has below than one. It means India has no comparative advantages in these goods. Therefore, there is urgent need to improve the quality of products that makes competitiveness in the world market. The reasons may be high cost of production due using of outdated capital.

Table No.7 (Annexure 7) shows that all 10 commodities of Brazil's export to world have competitiveness in the world market. The index value of Soya beans, whether or not broken has highest value with 23.42 followed by Cane or beet sugar and chemically pure sucrose, in solid form with 17.84 and Petroleum oils, other than crude has the lowest value with 0.94. It means India and Brazil has competitiveness in agricultural products in the world.

Table No.8 (Annexure 8) shows that South Africa has competitiveness in many products like Platinum unwrought or in semi-manufactured forms, or in powder form... (10.54), Coal; briquettes, ovoids and similar solid fuels manufactured from coal... (5.41), Iron ores and concentrates, including roasted iron pyrites... (2.72), Ferro-alloys (6.41), Manganese ores and concentrates (6.40) and Motor vehicles for the transport of goods (1.53) Thus findings exhibit that in terms of competitiveness of the commodities in world market, Brazil has high level, SA has moderate level and India has poor level of competitiveness

Trade Barriers: When it comes to trading goods between countries, there are several common barriers that can make the process difficult, these may be-

1. Complex Customs Procedures that involve lots of paperwork and long wait times. Simplifying these processes and reducing bureaucratic hurdles can help trade flow more smoothly.
2. Currency fluctuations can also affect the competitiveness of exports and imports. If one country's currency significantly appreciates or depreciates against another's, it can impact trade flows. Measures to ensure currency stability can help mitigate this barrier.
3. Inadequate transportation infrastructure, including ports, roads, and railways, can also impede the efficient movement of goods. Investments in infrastructure and improvements in logistics can reduce trade barriers.
4. Differences in Intellectual Property Rights (IPR) regulations among countries can create trade barriers, especially in industries where intellectual property is critical. Harmonizing IPR laws can facilitate trade in these sectors.
5. Political tensions and disputes between countries can also result in trade barriers. Diplomatic efforts and negotiations are essential to address these issues. Countries can also work on bilateral or regional trade agreements to reduce trade barriers. Such agreements can address tariffs, NTBs, and other trade-related issues.

6. Conclusion:

Based on the analysis, the study found that the IBSA forum has a positive impact. This is evident from the fact that the import between the IBSA countries is higher than the total import. In addition, the growth rate of intra-IBSA import is greater than the intra-IBSA export, due to a significant decline in the latter.

Regarding the balance of trade, India has an unfavorable balance of trade with both Brazil and South Africa. On the other hand, South Africa has a favorable balance of trade with both countries, while Brazil has a positive

balance of trade with South Africa but a negative one with India. This indicates that South Africa and Brazil are more integrated, as both countries complement each other.

All three countries are well-suited to their respective lines of production, which could be beneficial for all. Brazil has advantages in all goods, while South Africa has a mixed experience and India is poor in terms of comparative advantages. Therefore, India needs to put in more effort to improve its economy.

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Annexure: 1

Table No. 1: Analysis of Intra IBSA Trade during 2013 to 2021 (Value US \$ Million)

Year	2013	2018	2021	Growth Rate
Imports				
Total IBSA Imports	821636.38	903422.68	898532.01	9.36%
Intra IBSA Imports	25508.88	23902.67	30910.79	21.18%
Share of Intra IBSA imports in total IBSA imports	3.10%	2.65%	3.44%	
Exports				
Total IBSA Exports	664217.943 5	647858.52 6	796949.529 7	19.98%
Intra IBSA Exports	20480.1960 2	17829.629 8	22866.4190 9	11.65%
Share of Intra IBSA exports in total IBSA Exports	3.08%	2.75%	2.87%	

Sources: Various issues of WITS, World Bank and values are calculated by author itself.

Annexure: 2

Table No. 2: Trade Analysis of IBSA (Value US \$ in Thousand)

Reporter	Trade With	India			Brazil			South Africa		
		2013	2018	2021	2013	2018	2021	2013	2018	2021
Brazil	Export	312978 3	390894 2	479901 8				183542 4	136246 6	118675 7
	Import	658739 6	403328 5	723394 8				759073 8	686121 8	102996 6
	Total Trade	971717 9	794222 6	120329 66				259449 8	204858 8	221672 6
	Balance of Trade	- 345761 4	- 124343	- 243492 9				107635 0	676344. 5	156788. 9
	% change in trade			23.83%						-15%
India	Export				611183 6	357696 0	626220 5	574246 7	401693 3	598946 3
	Import				383184 1	561620 3	492849 7	735175 5	824279 1	110707 26
	Total Trade				994367 6	919316 3	111907 02	130942 22	122597 24	170601 90
	Balance of Trade				227999 5	203924 4	133370 9	160928 8	422585 9	508126 3
	% change in trade						12.54%			30.29%
South Africa	Export	300308 1	450180 0	415553 4	657606. 1	462529. 4	473440. 9			
	Import	537190 6	384292 4	534777 8	160691 1	148134 6	129987 2			
	Total Trade	837498 6	834472 5	950331 1	226451 7	194387 5	177331 3			
	Balance of Trade	- 236882 5	- 658876	- 119224 4	- 949305	- 101881 6	- -826431			
	% change in trade			13.47%			-21.69%			

Source: WITS, World Bank and data manipulated by author

Annexure: 3

Table No. 3 India's Commodity Export to Brazil and South Africa (Value in US \$ Million)

SICT Code	Top 10 export Commodity of India	India's Export to World	India's export to Brazil	India's Export share with Brazil	India's export to South Africa	India's Share with SA
334	Petroleum oils, other than crude	94398.7	4251.91	4.50%	3531.3	4%
667	Diamonds, whether or not worked, but not mounted or set...	23919.7	1.16	0.00%	173.1	1%
542	Medicaments (excluding goods of heading 30.02, 30.05 or 30.06)...	17451.4	337.12	1.93%	559.3	3%
897	Articles of jewellery and parts thereof, of precious metal....	12306.3	1.08	0.01%	5.9	0%
042	Rice	10766.6	0.04	0.00%	77.6	1%
764	Electrical apparatus for line telephony or line telegraphy	10952.3	4.38	0.04%	219.9	2%
684	Unwrought aluminium	7079.7	69.03	0.98%	39.0	1%
784	Parts and accessories of the motor vehicles of headings 87.01 to 87.05....	6664.9	324.63	4.87%	84.1	1%
781	Motor cars and other motor vehicles principally designed for the transport...	6585.9	0.29	0.00%	1198.0	18%

36	Crustaceans, whether in shell or not....	4907.5	NA	#VALUE!	19.6	0%
	All commodities	452684.2				

Source: UN Comtrade and data calculated by author

Annexure: 4

Table No. 4: Brazil Export Composition with India and South Africa (Value in US \$ Million)

SICT Code	Commodity	Brazil Export to World	Brazil Export to India	Brazil share with India	Brazil Export to SA	Share with SA
222	Soya beans, whether or not broken	46664.3	13.709055	0.03%	9.404877	0.02%
281	Iron ores and concentrates, including roasted iron pyrites....	28888.7	0.000175	0.00%	86.404845	0.30%
333	Petroleum oils and oils obtained from bituminous minerals; crude.	42688.1	1847.666724	4.33%		0.00%
61	Cane or beet sugar and chemically pure sucrose, in solid form	11003.8	228.385477	2.08%	35.73827	0.32%
334	Petroleum oils, other than crude	13036.3	5.024477	0.04%	269.84656	2.07%
11	Meat of bovine animals, frozen	10938.2	0.22439	0.00%	1.015938	0.01%
81	Oil-cake and other solid residues	10339.5	13.723215	0.13%	9.25923	0.09%
44	Maize (corn)	12264.1	0.237434	0.00%	0.020665	0.00%
12	Meat and edible offal, of the poultry of heading 01.05.	8888.1	0.241494	0.00%	216.815854	2.44%
251	Chemical wood pulp, soda or sulphate, other than dissolving grades.	7906.4	3.502772	0.04%	3.502772	0.04%
	Total	334463.1				

Source: UN Comtrade and data calculated by author

Annexure: 5

Table No. 5: South Africa Export Commodity to India and Brazil (Value in US \$ Million)

SICT Code	Commodity	South Africa Export to world	South Africa Export to India	Share of Brazil with India	South Africa Export to Brazil	Share of Brazil with SA
681	Platinum unwrought or in semi-manufactured forms, or in powder form...	16690.4	59.737225	0.36%	NA	0.0%
321	Coal; briquettes, ovoids and similar solid fuels manufactured from coal...	13383	3126.300346	23.36%	74.51042	0.6%
281	Iron ores and concentrates, including roasted iron pyrites....	6500.1	5.342564	0.08%	NA	

971	Gold (including gold plated with platinum)	5264.9	NA	#VALUE!	NA	
781	Motor cars and other motor vehicles principally designed for the transport...	5765.4	0.044314	0.00%	27.556969	0.5%
671	Ferro-alloys	4252	41.789086	0.98%	10.267595	0.2%
782	Motor vehicles for the transport of goods	3974.4	0.02	0.00%	0.141531	0.0%
287	Manganese ores and concentrates.....	2885.8	456.02382	15.80%	59.468339	2.1%
743	Centrifuges, including centrifugal dryers....	2274.7	15.701983	0.69%	79.083775	3.5%
334	Petroleum oils, other than crude....	2814.4	26.12557	0.93%	0.274486	0.0%
	All Commodities	334463.1				

Source: UN Comtrade and data calculated by author

Annexure: 6

Table No.6: Revealed Comparative Advantage of India's Commodity Export

SICT Code	Commodity	India's Total Export	World Total Export	Revealed Comparative Advantage
334	Petroleum oils, other than crude	94398.7	844159.8	0.03
667	Diamonds, whether or not worked, but not mounted or set...	23919.7	139517.6	0.05
542	Medicaments (excluding goods of heading 30.02, 30.05 or 30.06)...	17451.4	448064.7	0.01
897	Articles of jewellery and parts thereof, of precious metal...	12306.3	130514.4	0.03
42	Rice	10766.6	19670.4	0.16
764	Electrical apparatus for line telephony or line telegraphy	10952.3	885616.6	0.00
684	Unwrought aluminium	7079.7	165045.3	0.01
784	Parts and accessories of the motor vehicles of headings 87.01 to 87.05....	6664.9	410696.4	0.00
781	Motor cars and other motor vehicles principally designed for the transport...	6585.9	758576.1	0.00
36	Crustaceans, whether in shell or not....	4907.5	29350.9	0.05
	All commodities	452684.2	130514.4	

Source: UN Comtrade and data has manipulated by author itself.

Annexure: 7

Table No.7: Revealed Comparative Advantage of Brazil's Commodity Export (Values in US \$ Million)

SICT Code	Commodity	Brazil's Total Export	World's Total Exports	RCA
222	Soya beans, whether or not broken	46664.3	122041.6	23.42
281	Iron ores and concentrates, including roasted iron pyrites....	28888.7	146465.8	12.10

333	Petroleum oils and oils obtained from bituminous minerals; crude.	42688.1	616015.0	4.24
61	Cane or beet sugar and chemically pure sucrose, in solid form	11003.8	37759.5	17.84
334	Petroleum oils, other than crude...	13036.3	844159.8	0.94
11	Meat of bovine animals, frozen	10938.2	66686.5	10.04
81	Oil-cake and other solid residues	10339.5	101192.1	6.26
44	Maize (corn)	12264.1	61794.3	12.15
12	7 Meat and edible offal, of the poultry of heading 01.05.....	8888.1	86303.6	6.31
251	Chemical wood pulp, soda or sulphate, other than dissolving grades.....	7906.4	50465.1	9.60
	Total	334463.1	20482368.8	

Source: UN Comtrade and data has manipulated by author itself.

Annexure: 8

Table No.8: Revealed Comparative Advantage of SA's Commodity Export (Values in US \$ Million)

SICT Code	Commodity	South Africa's Total Export	World Total Export	RCA
681	Platinum unwrought or in semi-manufactured forms, or in powder form...	16690.4	97010.7	10.54
321	Coal; briquettes, ovoid's and similar solid fuels manufactured from coal...	13383	151404.3	5.41
281	Iron ores and concentrates, including roasted iron pyrites....	6500.1	146465.8	2.72
971	Gold (including gold plated with platinum)	5264.9	406720.8	0.79
781	Motor cars and other motor vehicles principally designed for the transport...	5765.4	758576.1	0.47
671	Ferro-alloys	4252	40633.93	6.41
782	Motor vehicles for the transport of goods	3974.4	158572.4	1.53
287	Manganese ores and concentrates.....	2885.8	27639.73	6.40
743	Centrifuges, including centrifugal dryers....	2274.7	169044.8	0.82
334	Petroleum oils, other than crude....	2814.4	844159.8	0.20
	All Commodities	334463.1	20482369	